

## **II. PURPOSE AND NEED FOR PROJECT**

### **A. Purpose of Project**

The primary purposes of the proposed project include the following:

- Improve the levels of traffic service by reducing travel time along the US 221 Intrastate Corridor, and
- Increase safety.

### **B. Need for Project**

Projected traffic congestion and existing crash rates create a need for improved highway capacity and safety enhancements to this two-lane segment of US 221. These needs are demonstrated by the following conditions:

- Current and future (2025) traffic volumes on portions of US 221 between Rutherfordton and Gilkey operate at or near the roadway's traffic carrying capacity (i.e., level of service E [LOS E]). Projected future traffic volumes between Gilkey and Glenwood will operate at LOS D in 2025. Between Glenwood and Marion, future volumes will operate at LOS E. LOS D represents severely restricted traffic flow with low operating speeds and LOS E represents conditions at or near the roadway's capacity. These are not acceptable levels of service for a rural arterial roadway.
- This segment of US 221 is on the National Highway System and is part of the Intrastate System, designated in 1989 by the North Carolina General Assembly to provide safe, high-speed travel throughout the state. US 221 is part of a corridor that extends from Spartanburg/Greenville, SC, to Boone, NC. This is an important arterial that links the foothills and the northwest mountains. According to the NCDOT Intrastate System map, this section of US 221 is in need of improvement.
- Five fatal crashes occurred within the project study area during the three year period from 1998-2000. The fatal crash rate for US 221 in the project study area (4.5 crashes per 100 million vehicle miles [mvm]) for that three-year period was higher than the statewide average crash rate (2.6 crashes per 100 mvm). However, no fatal crashes occurred within the project study area during a recent three year period. While the total crash rate for US 221 along TIP Project R-2597 between the Rutherford County line and SR 1153 (95.80 crashes per 100 mvm) is lower than the statewide average crash rate (151.02 crashes per 100 mvm), the total crash rate for US 221 between SR 1366 and the McDowell County line (178.48 crashes per 100 mvm) and along TIP Project R-204D&E (159.82 crashes per 100 mvm) is higher than the statewide average rate. The most common crash patterns are rear-end slow or stopped collisions, animal collisions, and fixed object collisions. These patterns account for more than 60 percent of the total crashes and are typical of congested conditions on roadways with little or no control of access. Rear-end crashes are common in stop-and-go conditions and result from drivers following too closely.